

Anadarko Petroleum Corp.

Shenandoah: major discovery confirmed valued at ~\$4/share

Shenandoah: 500mm - 1bn boe potential

On our recent bus tour we suggested that news on Anadarko's Shenandoah well was imminent, pending closing of the latest GoM lease round on 3/18. Right on time, APC has announced the result the appraisal well – and it looks huge. With 1,000ft of net oil pay across multiple lower tertiary reservoirs and good rock properties management has taken the rare step of describing Shenandoah as a potential giant, meaning possibly more than 500mm bbls. However, from data released by APC so far, we contend that a simple reservoir engineering approach to the potential scale of the discovery could reasonably lie between 500mm – 1bn boe, more than double the range we had previously assumed.

Shenandoah sets up APC's 3rd major US GoM development

Multiple parallel development schemes now come into play although rig limitations may defer further appraisal drilling until 2014. Still, even with a 4/5 year timeline to first oil, we now believe fair value for Shenandoah net to APC could reasonably be ~\$2bn, or \$4 per share – some 2x our prior estimate. As noted in our recent note *APC: News flow starts now*, the line of sight on high margin operated developments in the US GoM is a catalyst that can force market recognition of embedded exploration value.

Taking the steps to release value: still our top pick

We continue to believe management is taking steps to release value. Exploration value that has long been embedded in the stock is transitioning to a development pipeline that provides the catalyst to drive APC's multiple lower. Put simply we believe APC is bridging the gap between a value play and a growth stock. Watch for news on a potential partial Mozambique monetization following the bid deadline for APC's 10% stake on March 14th. APC remains our sector top pick, and pending confirmation on the timeline to development, risks to our \$120 PO look skewed higher.

Estimates (Dec)

(US\$)	2011A	2012A	2013E	2014E	2015E
EPS	3.37	4.10	4.33	5.81	6.36
GAAP EPS	(5.31)	4.75	4.33	5.81	6.36
EPS Change (YoY)	86.2%	21.7%	5.6%	34.2%	9.5%
Consensus EPS (Bloomberg)			4.01	5.10	6.19
DPS	0.36	0.36	0.36	0.36	0.36

Valuation (Dec)

	2011A	2012A	2013E	2014E	2015E
P/E	24.7x	20.3x	19.2x	14.3x	13.1x
GAAP P/E	NM	17.5x	19.2x	14.3x	13.1x
Dividend Yield	0.4%	0.4%	0.4%	0.4%	0.4%
EV / EBITDA*	21.7x	6.8x	6.6x	5.6x	5.2x
Free Cash Flow Yield*	-7.6%	2.6%	1.8%	5.3%	7.4%

* For full definitions of *IQmethod*TM measures, see page 8.

Company Update

BUY

Equity | United States | Oil & Gas Producers
19 March 2013

Bank of America Merrill Lynch



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Stock Data

Price	US\$83.28
Price Objective	US\$120.00
Date Established	6-Jun-2012
Investment Opinion	C-1-7
Volatility Risk	HIGH
52-Week Range	US\$56.42-85.70
Mkt Val / Shares Out (mn)	US\$41,640 / 500.0
BofAML Ticker / Exchange	APC / NYS
Bloomberg / Reuters	APC US / APC.N
ROE (2013E)	10.1%
Total Dbt to Cap (Dec-2012A)	39.1%
Est 5-Yr EPS / DPS Growth	20.5% / 0%



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Refer to important disclosures on page 9 to 11. Analyst Certification on Page 7. Price Objective Basis/Risk on page 7. Link to Definitions on page 7. 11258639

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Anadarko Petroleum Corp.

*iQprofile*SM Anadarko Petroleum Corp.

*iQmethod*SM – Bus Performance*

(US\$ Millions)	2011A	2012A	2013E	2014E	2015E
Return on Capital Employed	-3.0%	5.3%	5.2%	6.4%	6.6%
Return on Equity	8.7%	10.6%	10.1%	12.2%	11.9%
Operating Margin	-14.6%	30.1%	33.3%	37.2%	37.9%
Free Cash Flow	(3,145)	1,097	749	2,213	3,085

*iQmethod*SM – Quality of Earnings*

(US\$ Millions)	2011A	2012A	2013E	2014E	2015E
Cash Realization Ratio	1.5x	4.1x	3.7x	3.2x	3.2x
Asset Replacement Ratio	1.5x	1.8x	1.7x	1.6x	1.5x
Tax Rate	24.4%	31.9%	44.8%	44.4%	44.2%
Net Debt-to-Equity Ratio	66.0%	49.3%	39.8%	28.1%	15.4%
Interest Cover	-2.2x	5.0x	6.4x	8.2x	8.9x

Income Statement Data (Dec)

(US\$ Millions)	2011A	2012A	2013E	2014E	2015E
Sales	12,834	12,396	14,077	16,122	17,093
% Change	28.2%	-3.4%	13.6%	14.5%	6.0%
Gross Profit	NA	NA	NA	NA	NA
% Change	NA	NA	NA	NA	NA
EBITDA	3,036	9,637	9,968	11,666	12,582
% Change	-53.0%	217.4%	3.4%	17.0%	7.8%
Net Interest & Other Income	(1,554)	(216)	(690)	(690)	(690)
Net Income (Adjusted)	1,681	2,057	2,184	2,930	3,210
% Change	86.8%	22.4%	6.2%	34.1%	9.6%

Free Cash Flow Data (Dec)

(US\$ Millions)	2011A	2012A	2013E	2014E	2015E
Net Income from Cont Operations (GAAP)	(2,649)	2,391	2,184	2,930	3,210
Depreciation & Amortization	3,830	3,964	4,159	4,547	4,705
Change in Working Capital	(778)	(847)	0	0	0
Deferred Taxation Change	(1,461)	164	831	1,163	1,400
Other Adjustments, Net	3,563	2,667	824	824	1,020
Capital Expenditure	(5,650)	(7,242)	(7,250)	(7,250)	(7,250)
Free Cash Flow	-3,145	1,097	749	2,213	3,085
% Change	NM	NM	-31.7%	195.4%	39.4%

Balance Sheet Data (Dec)

(US\$ Millions)	2011A	2012A	2013E	2014E	2015E
Cash & Equivalents	2,697	2,471	3,740	5,773	8,677
Trade Receivables	3,259	2,747	2,747	2,747	2,747
Other Current Assets	975	1,577	877	877	877
Property, Plant & Equipment	37,501	38,398	40,073	40,829	40,994
Other Non-Current Assets	7,347	7,396	7,196	7,196	7,196
Total Assets	51,779	52,589	54,633	57,422	60,491
Short-Term Debt	170	0	0	0	0
Other Current Liabilities	4,729	3,994	3,994	3,994	3,994
Long-Term Debt	15,080	13,269	13,269	13,269	13,269
Other Non-Current Liabilities	12,837	13,444	13,444	13,444	13,444
Total Liabilities	32,796	30,707	30,707	30,707	30,707
Total Equity	18,983	21,882	23,926	26,715	29,784
Total Equity & Liabilities	51,779	52,589	54,633	57,422	60,491

* For full definitions of *iQmethod*SM measures, see page 8.

Company Description

APC is a large cap E&P with 2.53 BBOE of reserves (86% US, 11% Algeria, 4% other, 59% natural gas) with its production focused in the Rocky Mountains, Texas and the mid-continent, deepwater Gulf of Mexico, Alaska and Algeria. It has exploratory activities in West Africa, Mozambique, GOM, Brazil, China. Production growth in 2012-2014 is derived from its three mega projects: Jubilee (Ghana), Caesar/Tonga (GOM) and El Merk (Algeria) and the US unconventional shale plays.

Investment Thesis

APCs asset value can be uniquely benchmarked vs multiple 3rd parties. In the past year this has been overshadowed by ongoing Tronox litigation which is approaching conclusion but where multiples of a reasonable worst case is discounted. In 2013 mgt has signaled asset sales we believe can release value. At the same time Brent levered production steps higher and together provides the catalyst for outperformance in the next year.

Stock Data

Average Daily Volume 3,312,827

Quarterly Earnings Estimates

	2012	2013
Q1	0.92A	0.98E
Q2	1.43A	0.96E
Q3	0.84A	1.09E
Q4	0.91A	1.31E

Shenandoah Major Discovery

Initial look: this could be 500mm - 1bn boe

On our recent bus tour we suggested that news on Anadarko's Shenandoah well was imminent, pending closing of the latest GoM lease round on 3/18. Right on time, APC has announced the result the appraisal well – and it looks huge. With 1,000ft of net oil pay across multiple lower tertiary reservoirs and good rock properties management has taken the rare step of describing Shenandoah as a potential giant, meaning possibly more than 500mm bbls. The discovery has also been described as one of APC's largest discoveries in the US GoM. From data released by APC so far we, we contend that a simple reservoir engineering approach to the potential scale of the discovery could reasonably lie between 500mm – 1bn boe. Multiple parallel development schemes now come into play although rig limitations may defer further appraisal drilling until 2014. Still, even with a 4/5 year timeline to first oil, we now believe fair value for Shenandoah net to APC could reasonably be ~\$2bn, or \$4 per share – some 2x our prior estimate. As noted in our recent note [APC: News flow starts now](#), the line of sight on high margin operated developments in the US GoM is a catalyst that can force market recognition of embedded exploration value. APC remains our sector top pick, and pending confirmation on the timeline to development, risks to our \$120 PO look skewed higher.

Chart 1: The Shenandoah sub basin



Source: Anadarko

Shenandoah: our assessment, this could be 500 - 1bn boe

Anadarko announced the Shenandoah discovery in Feb 2009 with the discovery well encountering over 300ft of net oil pay in the lower tertiary 'Wilcox' formation in Walker Ridge Block 52. The well was drilled to a total depth of ~30,000ft in water depths of ~5,750ft. At the time, reservoir properties were described as much higher quality than had previously been seen in the Lower-Tertiary.

With confirmation of a successful appraisal the scale of the discovery stands potentially as one of the largest in the US GoM, with initial reservoir modeling approaches to scale suggesting it could exceed 1bn boe.

The Shenandoah appraisal well was drilled in the adjacent block 51, over 1 mile SW of the discovery well and 1,700ft down dip on the structure to test the extent of the reservoir accumulation. The well encountered 1,000 ft of net pay but did not encounter an oil water contact, with sands full to base. Accordingly, the lateral extent of the field has still not been established and will require additional appraisal drilling, which from discussions with management may not occur until 2014.

Table 1: US GoM location of Shenandoah



Source: Anadarko



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Anadarko Petroleum Corp

Anadarko operates Shenandoah with a 30% working interest. Co-owners are ConocoPhillips (30%), Cobalt International Energy (20%), Marathon (10%) and Venari Resources LLC (10%).

How big could it be?

Shenandoah straddles two blocks, and based on representations by management, the structure appears to cover a lateral area equivalent to an entire US GoM block, or ~5,500 acres.

While it is perhaps too early to speculate on average sand thickness, taking a simple average of the first two wells, would imply ~650ft. To be conservative we will round down to 500ft. Management commentary on log and pressure data describes Shenandoah as having 'excellent quality reservoirs and fluid properties', which similar to the discovery well were of much higher quality than has previously been encountered in lower tertiary reservoirs. In discussion with management it has suggested porosity of ~20%, and interstitial water content also around ~20%.

The table below shows a simple standard tank model approach to assessing oil in place, using the formula

$$\text{OOIP} = 7,758 * A * d * \Phi * (1-S_w) * 1/Bo$$

Where ' Φ ' is % porosity, ' S_w ' is interstitial water, ' A ' is areal extent in acres and ' d ' is reservoir thickness in feet. 7,758 is the conversion factor for barrels per acre foot. The theoretical 'Original Oil In Place' calculation under a high and low scenario is shown below.

Table 2: Standard tank model suggests range could reasonably be 500mm - 1.4bn boe

	Lo	Hi
API Bbl / acre ft	7,758	7,758
Areal extent acres	4,000	5,000
Depth ft	300	500
Porosity Φ	20%	20%
Interstitial water (S_w)	20%	20%
Original Oil In Place mm boe	1,490	3,103
Recovery factor	35%	45%
Resource size bn boe	521	1,396

Source: BofA Merrill Lynch Global Research

Recovery factors can't be known at this time – but for a standard US GoM well under water drive, a range of 25% – 35% would not be unusual.

On this basis we suggest that an initial range for the discovery could reasonably be in a range of 500 – 1.4bn boe.

When running this analysis past management, APC is not currently prepared to suggest anything beyond the 'giant' scale mentioned in the press release, meaning at least 500 million boe. But even at this level we believe any development scenario for Shenandoah most likely includes more than one facility – and may well allow for a repeat of the 'design one, build many' approach already taken with the Lucius and Heidelberg developments. As we noted in our recent Bus Tour note, any development plan may incorporate adjacent prospects in the Shenandoah mini basin – namely Chevron's operated Coronado prospect (APC 15%) and Shell's Yucatan target (APC 15%). Note that APC has also confirmed Coronado as a discovery, although the operator has yet to provide any color.

Table 3: Shenandoah notional value by player

		Phase 1	Phase 2	Total	per share
APC	30%	974	882	1,856	3.71
COP	30%	974	882	1,856	1.51
CIE	20%	649	588	1,237	3.04
MRO	10%	325	294	619	0.87

Source: BofA Merrill Lynch Global Research

What's the potential value?

We previously assessed the potential value of Shenandoah on the assumption of a single development, and 400 million boe. With the scale of the appraisal well and subsequent analysis, we suggest this is likely conservative – and present an alternative valuation based on twin, staggered development with first oil in 2017 and 2018 respectively, each at 80,000 boepd. This is shown in the tables below.

Table 4: Assumed Shenandoah phase 1: onstream 2017

Project Cost Summary & Budget			Production & Efficiency			Key Metrics		
Project Overview			Production Data			Financials		
Project Name	2024	100%	Line 1	100%	100%	Initial Cost	\$100,000	100%
Start Date	2024-01-01	100%	Line 2	100%	100%	Operating Costs	\$50,000	100%
End Date	2024-12-31	100%	Line 3	100%	100%	Profit	\$50,000	100%
Current Status	100%	100%	Line 4	100%	100%	Revenue	\$150,000	100%
Resource Allocation			Quality Control			Customer Feedback		
Team Lead	100%	100%	Defect Rate	100%	100%	Customer Satisfaction	100%	100%
Team Size	100%	100%	Defect Count	100%	100%	Complaints	100%	100%
Team Skills	100%	100%	Defect Type	100%	100%	Feedback Score	100%	100%
Team Location	100%	100%	Defect Cause	100%	100%	Feedback Source	100%	100%
Team Budget	100%	100%	Defect Impact	100%	100%	Feedback Action	100%	100%
Team Training	100%	100%	Defect Resolution	100%	100%	Feedback Follow-up	100%	100%
Team Equipment	100%	100%	Defect Prevention	100%	100%	Feedback Review	100%	100%
Team Materials	100%	100%	Defect Analysis	100%	100%	Feedback Report	100%	100%
Team Tools	100%	100%	Defect Summary	100%	100%	Feedback Conclusion	100%	100%
Team Support	100%	100%	Defect Conclusion	100%	100%	Feedback Recommendation	100%	100%
Team Communication	100%	100%	Defect Final Report	100%	100%	Feedback Final Review	100%	100%
Team Documentation	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Reporting	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Evaluation	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Improvement	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Feedback	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Action	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Results	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Impact	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Value	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Benefit	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Success	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Achievement	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Progress	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Growth	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Development	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Innovation	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Creativity	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Problem Solving	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Decision Making	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Communication	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Collaboration	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Teamwork	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Synergy	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Cohesion	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Unity	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Spirit	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Morale	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Engagement	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Motivation	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Commitment	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Dedication	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%
Team Passion	100%	100%	Defect Final Conclusion	100%	100%	Feedback Final Review	100%	100%
Team Enthusiasm	100%	100%	Defect Final Summary	100%	100%	Feedback Final Report	100%	100%

Source: BofA Merrill Lynch Global Research

Table 5: Assumed Shenandoah phase 1: onstream 2017

[illegible]

Source: BofA Merrill Lynch Global Research

While it is clearly too early to be definitive on the precise development scenarios, it is equally unreasonable to ignore the scale of the Shenandoah and associated value net to APC. On this basis we suggest that a twin development that assumes total resource of 700 mm boe would reasonably have value net to APC of ~\$1.9bn, or ~\$4 per APC share.

If confirmed this would be the latest in a series of potential development hubs operated by Anadarko which we believe will contribute some 74,000 boepd net by 2017 and 100,000 boepd by 2018. Critically, 2/3 of this volume will be achieved at no cost to Anadarko.

- In mid 2012, APC farmed down 7.2% of its interest in the 300mm bbl Lucius discovery for \$556mm. APC retained 27.8% and remains operator. However the implied value of the transaction underlines associated value of ~\$2.7bn for the field which is within sight of the value we are carrying in our NPV.
- In March 2013, APC secured a 2nd JV carry agreement – this time on the Heidelberg development, which is a lookalike to the 80,000 bpd Lucius spar, and is due on-stream in 2016. APC farmed out 12.75% for 860 mmbob, retained 31.5%, with an implied total value net to Anadarko of ~\$3bn.

Chart 2: Heidelberg: APC NPV \$3 / share before carry

Cash Flow Summary & Analysis				Production & Efficiency				Financial Trends			
Project Overview & Risk				Cost Breakdown				Financial Metrics			
Project Name	101-001	10%	10%	Construction	Construction Phase 1	75.1%	75.1%	Revenue Growth	15.2%	0	
Start Date	2023-01-01	15%	15%	Operations	Operational Phase 2	82.5%	82.5%	Profit Margin	18.7%	1	
End Date	2023-12-31	10%	10%	Logistics	Logistics Phase 3	78.9%	78.9%	Capital Expenditure	12.3%	2	
Overall Profit (%)	15.8%	12%	12%	Quality	Quality Phase 4	85.0%	85.0%	Debt Service	10.5%	3	
Cash Flow Summary				Key Assumptions				Operational Metrics			
Operating Cash Flow	100.0	10%	10%	Capacity	Capacity Phase 1	70.0%	70.0%	Production Volume	1000 units	4	
Investing Cash Flow	-20.0	15%	15%	Efficiency	Efficiency Phase 2	75.0%	75.0%	Quality Score	95.0%	5	
Financing Cash Flow	10.0	10%	10%	Costs	Costs Phase 3	72.0%	72.0%	Customer Satisfaction	90.0%	6	
Free Cash Flow	90.0	12%	12%	Revenue	Revenue Phase 4	80.0%	80.0%	Employee Retention	88.0%	7	
Net Cash Flow	80.0	10%	10%	Operating Costs	Operating Costs Phase 1	78.0%	78.0%	Market Share	12.0%	8	
Capital Expenditure	-10.0	15%	15%	Logistics Costs	Logistics Costs Phase 2	75.0%	75.0%	Competitor Analysis	10.0%	9	
Debt Service	10.0	10%	10%	Quality Costs	Quality Costs Phase 3	72.0%	72.0%	Regulatory Compliance	98.0%	10	
Overall Profit (%)	15.8%	12%	12%	Capacity Utilization	Capacity Utilization Phase 4	85.0%	85.0%	Customer Churn Rate	2.0%	11	
Free Cash Flow	90.0	10%	10%	Efficiency Gains	Efficiency Gains Phase 1	80.0%	80.0%	Employee Turnover	5.0%	12	
Net Cash Flow	80.0	15%	15%	Cost Savings	Cost Savings Phase 2	78.0%	78.0%	Market Penetration	15.0%	13	
Capital Expenditure	-10.0	10%	10%	Revenue Growth	Revenue Growth Phase 3	82.0%	82.0%	Competitor Response	18.0%	14	
Debt Service	10.0	15%	15%	Operating Costs	Operating Costs Phase 4	75.0%	75.0%	Customer Acquisition	10.0%	15	
Overall Profit (%)	15.8%	10%	10%	Logistics Costs	Logistics Costs Phase 1	72.0%	72.0%	Employee Retention	88.0%	16	
Free Cash Flow	90.0	15%	15%	Quality Costs	Quality Costs Phase 2	70.0%	70.0%	Market Share	12.0%	17	
Net Cash Flow	80.0	10%	10%	Capacity Utilization	Capacity Utilization Phase 3	85.0%	85.0%	Customer Churn Rate	2.0%	18	
Capital Expenditure	-10.0	15%	15%	Efficiency Gains	Efficiency Gains Phase 4	80.0%	80.0%	Employee Turnover	5.0%	19	
Debt Service	10.0	10%	10%	Cost Savings	Cost Savings Phase 1	78.0%	78.0%	Market Penetration	15.0%	20	
Overall Profit (%)	15.8%	15%	15%	Revenue Growth	Revenue Growth Phase 2	82.0%	82.0%	Competitor Response	18.0%	21	
Free Cash Flow	90.0	10%	10%	Operating Costs	Operating Costs Phase 3	75.0%	75.0%	Customer Acquisition	10.0%	22	
Net Cash Flow	80.0	15%	15%	Logistics Costs	Logistics Costs Phase 4	72.0%	72.0%	Employee Retention	88.0%	23	
Capital Expenditure	-10.0	10%	10%	Quality Costs	Quality Costs Phase 1	70.0%	70.0%	Market Share	12.0%	24	
Debt Service	10.0	15%	15%	Capacity Utilization	Capacity Utilization Phase 2	85.0%	85.0%	Customer Churn Rate	2.0%	25	
Overall Profit (%)	15.8%	10%	10%	Efficiency Gains	Efficiency Gains Phase 3	80.0%	80.0%	Employee Turnover	5.0%	26	
Free Cash Flow	90.0	15%	15%	Cost Savings	Cost Savings Phase 4	78.0%	78.0%	Market Penetration	15.0%	27	
Net Cash Flow	80.0	10%	10%	Revenue Growth	Revenue Growth Phase 1	82.0%	82.0%	Competitor Response	18.0%	28	
Capital Expenditure	-10.0	15%	15%	Operating Costs	Operating Costs Phase 2	75.0%	75.0%	Customer Acquisition	10.0%	29	
Debt Service	10.0	10%	10%	Logistics Costs	Logistics Costs Phase 3	72.0%	72.0%	Employee Retention	88.0%	30	
Overall Profit (%)	15.8%	15%	15%	Quality Costs	Quality Costs Phase 4	70.0%	70.0%	Market Share	12.0%	31	
Free Cash Flow	90.0	10%	10%	Capacity Utilization	Capacity Utilization Phase 1	85.0%	85.0%	Customer Churn Rate	2.0%	32	
Net Cash Flow	80.0	15%	15%	Efficiency Gains	Efficiency Gains Phase 2	80.0%	80.0%	Employee Turnover	5.0%	33	
Capital Expenditure	-10.0	10%	10%	Cost Savings	Cost Savings Phase 3	78.0%	78.0%	Market Penetration	15.0%	34	
Debt Service	10.0	15%	15%	Revenue Growth	Revenue Growth Phase 4	82.0%	82.0%	Competitor Response	18.0%	35	
Overall Profit (%)	15.8%	10%	10%	Operating Costs	Operating Costs Phase 1	75.0%	75.0%	Customer Acquisition	10.0%	36	
Free Cash Flow	90.0	15%	15%	Logistics Costs	Logistics Costs Phase 2	72.0%	72.0%	Employee Retention	88.0%	37	
Net Cash Flow	80.0	10%	10%	Quality Costs	Quality Costs Phase 3	70.0%	70.0%	Market Share	12.0%	38	
Capital Expenditure	-10.0	15%	15%	Capacity Utilization	Capacity Utilization Phase 4	85.0%	85.0%	Customer Churn Rate	2.0%	39	
Debt Service	10.0	10%	10%	Efficiency Gains	Efficiency Gains Phase 1	80.0%	80.0%	Employee Turnover	5.0%	40	
Overall Profit (%)	15.8%	15%	15%	Cost Savings	Cost Savings Phase 2	78.0%	78.0%	Market Penetration	15.0%	41	
Free Cash Flow	90.0	10%	10%	Revenue Growth	Revenue Growth Phase 3	82.0%	82.0%	Competitor Response	18.0%	42	
Net Cash Flow	80.0	15%	15%	Operating Costs	Operating Costs Phase 4	75.0%	75.0%	Customer Acquisition	10.0%	43	
Capital Expenditure	-10.0	10%	10%	Logistics Costs	Logistics Costs Phase 1	72.0%	72.0%	Employee Retention	88.0%	44	
Debt Service	10.0	15%	15%	Quality Costs	Quality Costs Phase 2	70.0%	70.0%	Market Share	12.0%	45	
Overall Profit (%)	15.8%	10%	10%	Capacity Utilization	Capacity Utilization Phase 3	85.0%	85.0%	Customer Churn Rate	2.0%	46	
Free Cash Flow	90.0	15%	15%	Efficiency Gains	Efficiency Gains Phase 4	80.0%	80.0%	Employee Turnover	5.0%	47	
Net Cash Flow	80.0	10%	10%	Cost Savings	Cost Savings Phase 1	78.0%	78.0%	Market Penetration	15.0%	48	
Capital Expenditure	-10.0	15%	15%	Revenue Growth	Revenue Growth Phase 2	82.0%	82.0%	Competitor Response	18.0%	49	
Debt Service	10.0	10%	10%	Operating Costs	Operating Costs Phase 3	75.0%	75.0%	Customer Acquisition	10.0%	50	

Source: BofA Merrill Lynch Global Research

Chart 3: Lucius: APC NPV \$4 / share before carry

[illegible]

Source: BofA Merrill Lynch Global Research



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Table 6: Undeveloped exploration now \$47 / sh

Asset	\$value
Brazil	2,500
US GoM	
Vito	1,090
Lucius	2,005
Lucius Carry	556
Shenandoah	1,856
Heidelberg	1,614
Heidelberg carry	860
Samurai	417
Total GoM	8,398
Kosmos	4,000
Mozambique	8,588
Total undeveloped exploration	23,486
per share	\$ 47.00

Source: BofA Merrill Lynch Global Research

Assuming that Shenandoah achieves line of sight for first oil in 2017, as is currently projected by management, we estimate the total NPV associated with these three major developments is around \$6bn, or \$12 per APC share.

Alongside other major exploration successes, that have long dated lines of sight to development, we maintain our view that APC is, simply amongst the most undervalued of the large cap US oils.

The margin chart summarizes the most significant assets that fall in this category. With the confirmed scale of Shenandoah, the value we associate with undeveloped exploration moves up slightly from \$45 / share to \$47 / share and underpins again our view that the value of exploration is a significant differentiating factor versus peers.

Summary

Option value still lies ahead

Management is taking steps to accelerate the release of value for shareholders. Exploration value that has long been embedded in the stock, is transitioning to a visible development pipeline providing the catalyst to drive APC's forward multiple lower as the portfolio skews hard towards international oil. If exploration value is excluded, APC screens as one of the most undervalued stocks in the sector. Over the next weeks and months we expect the process to accelerate with multiple exploration well results likely disclosed to the market and the very real possibility that the long awaited Mozambique monetization will be confirmed. A deep bench of additional exploration results over the balance of 2013 promises to extend project line of sight; but so to does the prospect of ongoing portfolio hi-grading that we believe will similarly accelerate value recognition by the market. Put simply we believe APC is bridging the gap between a value play and growth stock; with the catalysts emerging that can release this value, APC remains our top sector pick. Buy. PO remains \$120.

Price objective basis & risk

Anadarko Petroleum Corp. (APC)

Our price objective of \$120 share is based on an aggregate of two measures: Discounted Cash Flow (DCF) and Net Asset Value (NAV). Our estimated NAV of the existing portfolio, and for the key P1 value, we use the SEC declared proven reserves and projected capital to bring PUDs to production. Our DCF valuation assumes long-term Brent and WTI oil prices of \$100.00 and \$90.00/bbl, respectively, and assumes a WACC of 11%.

Risks to our price objective: E&P companies, in general, are subject to commodity price volatility, operating risk, regulatory risk, and uncertainty of reserve estimates. Company-specific risks to achieving our price objective are: (1) About 22% of APC's production is derived from the Gulf of Mexico, which could be affected by weather-related or mechanical downtime. (2) Disappointing results in APC's exploratory program in the Gulf of Mexico, Brazil, or West Africa could invalidate our NAV assumptions and the longer-term growth outlook. (3) A weak commodity price environment could undermine the assumptions in our valuation.

Link to Definitions

Energy

Click [here](#) for definitions of commonly used terms.

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I, Doug Leggate, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - Large Cap Oils Coverage Cluster

Investment rating	Company	BofA Merrill Lynch ticker	Bloomberg symbol	Analyst
BUY	Anadarko Petroleum Corp.	APC	APC US	Doug Leggate
	Chesapeake Energy Corp.	CHK	CHK US	Doug Leggate
	Devon Energy Corp.	DVN	DVN US	Doug Leggate
	ExxonMobil Corp.	XOM	XOM US	Doug Leggate
	Hess Corp.	HES	HES US	Doug Leggate
	Marathon Oil Corp.	MRO	MRO US	Doug Leggate
	Marathon Petroleum Company	MPC	MPC US	Doug Leggate
	Noble Energy	NBL	NBL US	Doug Leggate
	Northern Tier Energy LP	NTI	NTI US	Jason Smith
	Occidental Petroleum Corp.	OXY	OXY US	Doug Leggate
	Range Resources Corp.	RRC	RRC US	Doug Leggate
	Tesoro Corp.	TSO	TSO US	Doug Leggate
	Valero Energy Corp.	VLO	VLO US	Doug Leggate



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US - Large Cap Oils Coverage Cluster

Investment rating	Company	BofA Merrill Lynch ticker	Bloomberg symbol	Analyst
NEUTRAL	Apache Corp.	APA	APA US	Doug Leggate
	Cabot Oil & Gas Corp.	COG	COG US	Doug Leggate
	Calumet Specialty Products Partners	CLMT	CLMT US	Jason Smith
	Chevron Corp.	CVX	CVX US	Doug Leggate
	EOG Resources	EOG	EOG US	Doug Leggate
	HollyFrontier Corp.	HFC	HFC US	Doug Leggate
	Phillips 66	PSX	PSX US	Doug Leggate
	Southwestern Energy Corp.	SWN	SWN US	Doug Leggate
UNDERPERFORM	ConocoPhillips	COP	COP US	Doug Leggate

iQmethodSM Measures Definitions

Business Performance	Numerator	Denominator
Return On Capital Employed	$\text{NOPAT} = (\text{EBIT} + \text{Interest Income}) * (1 - \text{Tax Rate}) + \text{Goodwill Amortization}$	Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill Amortization
Return On Equity	Net Income	Shareholders' Equity
Operating Margin	Operating Profit	Sales
Earnings Growth	Expected 5-Year CAGR From Latest Actual	N/A
Free Cash Flow	Cash Flow From Operations – Total Capex	N/A
Quality of Earnings		
Cash Realization Ratio	Cash Flow From Operations	Net Income
Asset Replacement Ratio	Capex	Depreciation
Tax Rate	Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio	Net Debt = Total Debt, Less Cash & Equivalents	Total Equity
Interest Cover	EBIT	Interest Expense
Valuation Toolkit		
Price / Earnings Ratio	Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value	Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield	Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield	Cash Flow From Operations – Total Capex	Market Cap. = Current Share Price * Current Basic Shares
Enterprise Value / Sales	$\text{EV} = \text{Current Share Price} * \text{Current Shares} + \text{Minority Equity} + \text{Net Debt} + \text{Other LT Liabilities}$	Sales
EV / EBITDA	Enterprise Value	Basic EBIT + Depreciation + Amortization

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APC Price Chart



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Investment Rating Distribution: Energy Group (as of 01 Jan 2013)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	145	45.89%	Buy	111	81.62%
Neutral	105	33.23%	Neutral	75	84.27%
Sell	66	20.89%	Sell	37	64.91%

Investment Rating Distribution: Global Group (as of 01 Jan 2013)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	1961	49.47%	Buy	1299	71.85%
Neutral	1013	25.55%	Neutral	640	70.18%
Sell	990	24.97%	Sell	543	59.15%

* Companies that were investment banking clients of BofA Merrill Lynch or one of its affiliates within the past 12 months. For purposes of this distribution, a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster*
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Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

* Ratings dispersions may vary from time to time where BofA Merrill Lynch Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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